
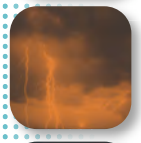

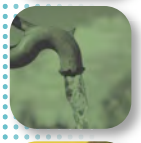

North Carolina's Climate

Weather describes relatively short-term atmospheric changes, such as those that spawn a cold front or passing thunderstorm. Climate, on the other hand, is a composite picture of weather patterns observed over many years. Temperature, precipitation and prevailing winds combine to create the weather and, thus, the climate.

What is North Carolina's climate like?

North Carolina has a humid, subtropical climate characterized by warm summers and short, mild winters. The growing season (the average annual freeze-free period) ranges from about 130 days in the highest mountain areas to around 290 days on the Outer Banks. At Hatteras, entire seasons often pass without frost or freezing temperatures.

A place's climate is determined by altitude (feet above sea level), topography (surface features), latitude (distance from the equator) and proximity to water (large lakes or oceans). The variation in altitudes in North Carolina—from 6,684 feet at the summit of Mount Mitchell to sea level at the coast—is the greatest of any state east of the Mississippi River. From the highest point to the lowest, the average temperature difference is more than 20 F, with the coolest weather happening in the mountains of western North Carolina. The Southern Appalachian mountains block much of the cold winter air coming out of the Southeast, moderating winter temperatures in the central Piedmont regions. Warm eddies spinning off the Gulf Stream current produce mild winters at the coast.

North Carolina receives an average of 48 inches of precipitation per year, falling predominantly as rain. The Coastal Plain gets about 48–60 inches annually, while the Piedmont usually sees 40–50 inches. The most extreme variations in annual precipitation are within the mountain region. The mountains create a barrier to moisture moving easterly from the Gulf of Mexico. As moist air rises over the mountains, much of the precipitation drops on the western slopes, reducing the amount of moisture reaching the eastern mountains. The average annual rainfall is about 38 inches east of the slopes, whereas places west of the slopes see much higher amounts. In some parts of the mountains, more than 90 inches are recorded in an average year. These places are considered temperate rainforests.

On the whole, winter precipitation in North Carolina is seldom associated with very cold weather. Average winter snowfall rates are about 1 inch per year on the Outer Banks and the lower coast, about 10 inches in the northern Piedmont and about 16 inches in the southern mountains. Some of the higher mountain peaks and upper slopes see an average of about 50 inches of snow each year.*

How will global climate change affect North Carolina?

The average temperature in North Carolina increased by 1.2 F in the last century, and average precipitation has increased by 5 percent in many parts of the state. The Intergovernmental Panel on Climate Change estimates that average temperatures in the state could rise by as much as 5 F this century—causing an increase in the number of extremely hot days and making the climate more like that of present-day northern Florida. Precipitation could increase by up to 30 percent in some areas by the year 2100.** Many scientists predict that rising sea surface temperatures caused by global climate change will likely cause more frequent and intense hurricanes. In spite of more abundant precipitation, droughts may become more frequent due to greater evaporation rates connected to higher temperatures.

*Source: State Climate Office of North Carolina
**Climate Change and North Carolina. U.S. Environmental Protection Agency. Sept. 1998.

RAINDROPS KEEP FALLIN'

Precipitation could increase by as much as 30 percent in some parts of North Carolina by the year 2100.

View of Linville Gorge

PHOTO COURTESY OF NC DIVISION OF TOURISM, FILM AND SPORTS DEVELOPMENT